

REMARKS

Claims 14 and 20 have been rejected under 35 U.S.C. § 112 as being indefinite. Claims 14 and 20 are allegedly indefinite because it is "not clear if a 'food portion' recited in step a is the same food portion recited in claim 1 or a different food portion." Applicants respectfully submit that the claim is clear and definite. If *the* food portion of claim 1 was intended, then the claim would read as such. The food portion of claim 14 is a food portion which is blanched, etc.

Claims 1 and 9-12 have been rejected under 35 U.S.C. § 102(b) as being anticipated by Bell, et al. (US 4,504,509). Bell discloses a liquid batter for use in coating foodstuffs which comprises ungelatinized, highly crosslinked, high amylose starch. The crosslinking agent may be selected from the group specified in col. 3. The Examiner notes that one of these reagents is succinic anhydride. However, for succinic anhydride to crosslink starch, it must either be in the form of a mixed anhydride with acetic anhydride or the reaction temperature must be high (e.g. in the range of 350°F) to form a succinate diester. In contrast, the starch succinates of the present invention are not crosslinked starches, but half-esters formed by the reaction of starch with succinic anhydride. See Whistler, et al., Starch Chemistry and Technology, 2nd Ed., Academic Press, Orlando, pp. 341 (1984). This is clear to the skilled artisan through the specification (see for example page 5, line 8, which states the starch is a "succinate ester") and reaction conditions in the examples which are carried out without acetic anhydride at room temperature.

Claims 2-6 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Bell, et al. (US 4,504,509) in view of Richards, et al. (US 4,035,235). As explained above, Bell does not disclose using a succinate ester, but a starch crosslinked with succinic anhydride. Richards teaches starch derivatives which include the step of esterification of starch with n-octenyl succinic anhydride. There is no motivation to substitute the starch of Bell with that of Richards as the succinate esters of Richards are lipophilic. One skilled in the art would not add a lipophilic substance to reduce the fat content of a composition to be fried.

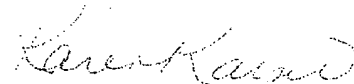
Claims 8 and 13-22 have been rejected under 35 U.S.C. § 103(a) as being patentable over Bell, et al. (US 4,504,509) in view of Wu et al. (US 5,648,110). As

explained above, Bell does not disclose using a succinate ester, but a starch crosslinked with succinic anhydride. Wu also teaches crosslinked starches and therefore does not cure the deficiency of Bell; that is the use of succinate esters. Regarding the Examiner's comment with respect to claim 20 with a limitation that the blanching is in water containing at least about 0.1% to no more than 0.8% cations by weight, it is not understood where in Bell or Wu there is a suggestion or teaching of adding cations to the blanching water or adding the starch to the blanching water.

Claims 1, 2 and 7 have been rejected under 35 U.S.C. § 103(a) as being patentable over Shi, et al. (US 2003/0099744). Shi discloses glazing food using a converted starch. The starch may be modified using any chemical modification, specifying that particularly useful starches are acetylated, hydroxyalkylated, phosphorylated, succinated and substituted succinate derivatives. However, modification is only an optional step and succinated starches just one of the possible modifications with none of the examples showing such succinated starches. The Examiner states that Shi does not disclose the food composition is a fried composition but that it would have been obvious to one skilled in the art to make a fried composition when wanting food having a different texture and flavor. However, the skilled artisan would not be motivated from a reading of Shi to fry the Shi composition. One skilled in the art does not fry a glaze.

In view of the foregoing, Applicant submits the Application is now in condition for allowance and respectfully requests early notice to that effect.

Respectfully submitted,



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Chemistry and Technology

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X. STARCH DERIVATIVES: PRODUCTION AND USES

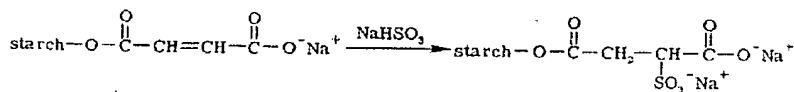
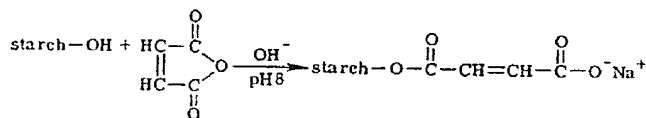
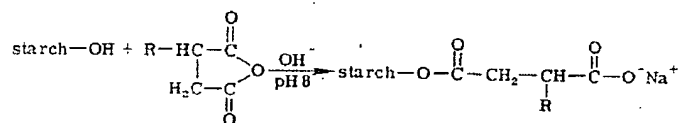
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6. Acetyl Analysis

The acetyl content of both high- and low-DS starch acetates can be determined by measuring the amount of alkali used in saponification (194, 207, 272). Transesterification in anhydrous methanol with sodium methoxide as the catalyst and distillation of the methyl acetate formed is also a suitable analytical method (194, 273). It has the advantage that saponification of the collected methyl acetate is unaffected by traces of nonvolatile acidic materials that may be formed from reducing end-groups in the first method. Combining the latter procedure with gas chromatography of the methyl esters formed can give a qualitative and quantitative analysis for acyl groups in any starch ester. Infrared spectroscopy of the methyl esters can also be used for identification of substituent ester groups. The infrared carbonyl peak at 1724 cm^{-1} has been used to determine the acetyl content in starch acetates (274); the method was also applied to carboxymethyl and cyanoethyl ethers of starch and to starch sulfate. ^1H -nmr can be used to detect and determine acetyl groups as well as other ester groups (275).

7. Miscellaneous Esters

a. Half-Esters of Dicarboxylic Acids



Utilizing the same controlled-pH, aqueous, alkaline starch suspension reaction used to prepare granular starch acetates, low-DS starch half esters of dicarboxylic acids can be prepared (95). Cyclic dibasic acid anhydrides such as succinic anhydride yield starch esters containing a free carboxylate group that increases the water-holding power of the product (95). If a maleate half-ester is made, a sulfonic acid group can be introduced by reaction with bisulfite to give a sulfosuccinate half-ester. This derivative has a lower gelatinization temperature compared to the maleate half-ester and gives clearer, more translucent, stable